E-MOR Guidance and Data Reporting to IDNR

Purpose: To provide guidance to NPDES permittees and CWA certified laboratories for accurately acquiring, recording and transmitting high quality analytical data to the Iowa Department of Natural Resources (IDNR).

Introduction: NPDES permittees are required to report operational data to the IDNR each month in Monthly Operation Reports (MORs). The data must be reported within 15 days of the end of the monitoring period. There are three options for reporting:

- Paper tables. Completed forms mailed to the IDNR Field Office
- The permittee's developed excel forms
- DNR created e-MOR forms; either mail on CD or diskette or by email.
  The IDNR provides a custom Excell spread sheet for each facility when NPDES permit is issued. The IDNR strongly encourages electronic reporting (e-MOR). e-MORs can be requested for existing permits.

Steps:. There are three basic STEPs for using the e-MOR report form.

1. Getting Started: Opening the file on the disk sent to you and saving it as a template.
2. Creating and entering data to the Monthly File: Using the saved file as a template and transcribing data to the e-MOR form each month.
3. Electronic Reporting to IDNR: Sending the e-MOR report to the IDNR field office each month.

STEP #1 Getting Started.

Custom e-MOR templates are distributed by IDNR for each NPDES permit in Excel spread sheet format. The e-MOR is to be used to submit Monthly Operating Reports, required by your NPDES permit, by the following means:

- Place the disk in the appropriate disk drive of your computer and open the file using Microsoft Excel.
  - There are various tabs at the bottom of the spread sheet. Click on the "Cover Page" tab.
    - ↳ Examine the "Cover Page" to make sure the template is correct for your facility.
    - ↳ The facility name and NPDES number on the Cover Page must be that of your facility
  - If you have questions see the Comments below.
  - If there are problems contact your DNR Field Office immediately
- Save the e-MOR file as a template to a secure location on your computer. The template will be used to create separate e-MOR file for each month.
- To create a file for a month, open the template file.
  - Select the drop down box for the "**Month/Year:"** field and select the appropriate numbers for the month and the year.
  - Complete the appropriate facility information.
  - Use the "Save As" function with following naming conventions:
    Format: *Facility Number_MonthYear*
    Example: 2900801_Jan06 *(Note: this is the month of monitoring, **not** the month reported!)*

Step #1; Comments:

Mathematical functions of e-MOR: Microsoft Excel was chosen as the reporting tool for the e-MOR because of its widespread availability and ease of use. In doing so, IDNR has adopted by default the math handling conventions of Excel. It is **important** to understand these default functions and how they affect data transcribed to the e-MOR in calculating Min., Max., Total and Avg. values.
The e-MOR form:

- Uses all integers (whole numbers) and most decimal values as numeric values for mathematical calculations.
- Rounds values of 0.00000009 ($9x10^{-8}$) or less (smaller values) to values of $Nx10^{-7}$. *See a further discussion of rounding and significant digits below in Step #2 Comments.*
- Recognizes 0.000000001 ($1x10^{-9}$) or less as 0 (zero).
- Recognizes all less than values denoted with the "<" symbol as a numeric value of 0 (zero) in mathematical calculations.
- Ignores all alphanumeric vales to include the ">" symbol; i.e. not include in calculations.

Generally, enter only numeric values in the data cells. Letters or words in the cells will be ignored by the math functions or interfere with the uploading of data to the IDNR database.

STEP #2 Monthly File: Acquiring and Transcribing data to the e-MOR; Laboratory data entry

Using the respective monthly e-MOR file saved from the template each month:

- Select the appropriate worksheet tab (INFLUENT, EFFLUENT, etc.) to load the relevant data.
- The left column (A) represents the days of the month.
- The additional column headers represent the monitoring parameters required by the facility's NPDES permit.
  - The column headers indicate the units of measure that are to be use for reporting. (Example: flows must be in MGD (millions of gallons per day)
- Enter the monitoring data as generated at your facility or received from your contract laboratory in those proper units.
- Use the "Save" function each time you have completed entering the data for an analyte, day &/or month.

Additionally:

- If the facility has additional outfalls, there will be worksheets (tabs) for each outfall to report monitoring results.
- If the facility has industrial contributors, there will be tabs for each contributor for monitoring results.
- Calculations for lbs/day, 30-day averages, 7-day averages, totals, maximums and minimums are automatically calculated by formulae imbedded in the e-MOR.
- Do not attempt to alter the formulae or the results of these calculations. These functions are protected and can not be changed.
- No Discharge Indicators, for the entire month, are used to explain why required monitoring was not performed and reported in an e-MOR column.
- See **Step #2; Comments:** "No Discharge Indicators" for additional detail.

Use of the Comments field:

- use the comments section on the title page of the e-MOR to list dilutions or problems in an analysis.
- There is a limited space in the Comments field; 255 characters. For longer comments include a formal letter of explanation or attach a document to the email along with monthly report.
- There is no rainfall column. Rainfall date and amount can be entered under Comments.
- The Comment field may be used to report pre-draw down results. See **Step #2; Comments:** Pre-Draw Down Sample Results: for additional detail.

Check the accuracy of the data:

- Initially when the e-MOR is received and periodically, check the accuracy of the automatic calculations of the Min, Max and Average values, etc. to insure the calculations are correct.
- Load a group of simple values where errors in the imbedded calculations would be obvious.
- If you find an error contact your field office immediately.

Step #2; Comments:

The e-MOR is intended as a monthly reporting form to IDNR. It is not intended as a replacement of the original bench sheets, chain of custody or laboratory report forms. The original data collection records must be retained on file at the facility for 5 years.

Analytical Results and No Detection:

- The facility or the certified laboratory must use EPA approved methods for analysis.
- Methods must have a minimum detection level below the NPDES discharge limit of the facility. Contract laboratories for the facility should have a copy of the facility's NPDES permit.
- If the quantitation limit of the particular batch of analysis is above the discharge limit, the sample results should be rejected and re-sampled.
- If the detection/ quantitation limits of the particular batch of analysis is below the discharge limit the sample results should be transcribed to the e-MOR as reported by the laboratory; report with the "<" value reported by the laboratory. **Do not enter zero.**
  - The e-MOR recognizes all "less than values" denoted with the "<" symbol as a numeric value of 0 (zero) in mathematical calculations.
  - If all the values in a column are less than the detection level of the lab test, use the No Discharger Indicator "NO DETECTION" by clicking on the yellow box at the top of the column.
  - When entering an individual result with a less than value, use the less than symbol "<" in the column.

Effluent Toxicity Test Results:

Enter Ceriodaphnia Acute Toxicity test results in the column labeled "TOX CER". Enter Pimephales Acute Toxicity results in the column labeled "TOX PIM". Enter a "1" for passing results or a "2" for failing results. If you did not take a sample for Acute Toxicity during the month and it has been less than 12 months since the last test was performed, enter the "NOT REQ/MP" no discharge indicator in both columns. If it has been more than 12 months since the last toxicity tests were performed and you did not take a sample during the month enter the "NOT REPORTED" no discharge indicator in both columns. If a sample was taken but results of the test have not been received leave the column blank and make a note in the "Comments" box on the cover sheet. Submit an amended report when the results are received.

Fecal Coliform/E.coli Monitoring:

- Certified laboratories should have sufficient historical data on the normal variation of coliforms in the samples. Dilutions should be sufficiently bracketed around that range to insure that the detection level is below the NPDES discharge limit.
- If the detection/ quantitation limit of the particular analysis is above the discharge limit the sample results should be rejected and re-sampled.

Geometric Mean:

The geometric mean can be calculated on the IDNR web site at http://www.iowadnr.com/water/npdes/calculator.html or on a regular Excel S/S using the "GEOMEAN" function.

Using the IDNR Geometric Mean Calculator:

- Enter the results of the five samples as reported by the certified laboratory.
- If a sample result is a less than value ("<"), enter the value reported by the lab into the Geometric Mean Calculator without the "<" symbol.
- If one or more of the individual results were a "<" value, report the calculated Geometric Mean value with the "<" symbol in the e-MOR.

Some bacteria data must be divided by 1,000 before entry.
Example: 200 cts/100mls = 0.2 cts/100mls. This is a left over data condition from the previous database that IDNR used to collect discharge information. That database had limits on the number of values that could be entered in to a field.

No Discharge Indicators:

No discharge indicators type codes are used to explain why the required monitoring was not performed nor reported in the e-MOR. If no data is to be entered for the month for a respective column, a No Discharge Indicator code must be entered in the top of the column. The No Discharge type codes are found by clicking on the yellow colored cell at the top of the respective column. The following are the available type codes:

Code:	Reason:
1-LAGOON STORAGE	No discharge and wastewater is being stored in the lagoon.
2-LOW FLOW	The flow is too small for proper measurements or sampling.
3-OPR SHUTDOWN	The operation generating the wastewater (e.g. an industrial contributor) is shutdown.
4-OUTFALL FROZ	The outfall pipe is frozen shut, preventing a discharge.
5-NO DETECTION	The measurement or analysis result is below the minimum detection or quantification limit of the procedure.
6-NOT REQ/MP	Not required this monitoring period (e.g. the two months that the monitoring is not performed when the required frequency is once every 3 months).
7-NOT REPORTED	Required monitoring was not reported.
8-BROKEN EQUIP	Broken equipment preventing performance of the required monitoring.
9-LAB ERROR	Laboratory error or accident resulting in no data or unreliable data.
10-UNDER CONSTR	The treatment facility or treatment units are under construction preventing a discharge or the performance of the required monitoring.
11-NO OPERATOR	There is no operator at the facility to perform the required monitoring.
12-CERTIFIED	No TTO (Total Toxic Organics) analysis results, compliance is certified by the industrial contributor.

Pre-Draw Down Sample Results:

Controlled discharge lagoons are required to take pre-draw down samples at least 2 weeks prior to initiating a discharge. Results from pre-draw down sampling need not be submitted to the IDNR. If you choose to report these results, place a note in the Comments field on the cover page indicating the date the samples were taken and the results. **Do not be enter the data on the effluent page**.

Qualified, Suspect or Rejected Data:

- It is the responsibility of certified laboratories to check and document the state of samples upon receipt. Samples, that exceed specific data quality parameters specified by the method &/or administrative code, and are analyzed must be clearly noted on the analytical report forms.
- It is the facilities responsibility to direct the laboratory whether to proceed with the analysis of these qualified, suspect or rejected samples.
- Those conditions that would make results of samples qualified, suspect or rejected samples must be reported on the MOR.

Fecal Coliform/E.coli samples:

- Qualified coliform samples that exceed the hold time temperatures should be rejected for compliance monitoring.
- The Department is conducting research to address this federal requirement.

Rounding:

Rounding is the process of reducing the number of significant digits in a number. There are various methods of rounding used: "common" and "round to even". Because rounding reduces any value to an easier to use but less precise number, the most important consideration is to **pick one method and stick with it.**

- Excel uses the "common rounding" rule when rounding numbers; i.e. *Rounds up a value ending in 5 or more, for example, 2.25 becomes 2.3 and 2.35 becomes 2.4. Rounds down if the next digit is 4 or less.*
- Standard Methods uses the "round to even" method that says values are to be rounded by dropping

digits that are not significant; i.e. *If the digit 6, 7, 8, or 9 is dropped, increase the preceding digit by one unit; If the digit 0, 1, 2, 3, or 4 is dropped do not alter the preceding digit. If the digit 5 is dropped, round off preceding digit to the nearest even number: thus 2.25 becomes 2.2 and 2.35 becomes 2.4.*

Significant Figures:

- Values measured/calculated at the facility should be reported to at least 2 significant digits (#.##)
- Certified laboratory results should be recorded in the e-MOR as reported from the laboratory.
  - Laboratories should report the analytical result to the significant figures of the certified method used and its minimum detection level.
  - See Standard Methods, 1050 B. for additional detail.

Total Toxic Organics (TTO):

For industrial users, if certification statement is allowed in lieu of monitoring toxicity, keep the monthly signed certification statement on file for review during inspections. Choose "certified" if you have it on file. Choose "Not Reported" if you do not have it on file, and explain why in the Comments section on the cover page.

Wastewater Bypass:

If you have a wastewater bypass, (wastewater bypasses treatment), report this as a 1 in the bypass column on any day that a bypass occurs. If you are able to estimate the amount, include the estimate in the Comments box or explain it in the e-mail. This is the only column that will typically be blank. All other columns should include information, whether it is data or one of the no discharge indicators selected from the drop down box in row 14.

STEP #3 **Electronic Reporting** e-MOR data to IDNR

- Once all the data for the monthly has been entered, set up or preview the print set up.
- Print off the final copy and sign off and file the copy as the official copy for the facility records.
- For industrial users, if a certification statement is allowed in lieu of monitoring toxicity, **keep the monthly signed certification statement on file** for review during inspections.
- Rule 567 IAC 63.7(455B) requires that records of operation (MORs) be submitted to the Department within 15 days of the end of the monitoring period."
- The final report for the month can be e-mailed or post office mailed to the Field Office.
  - To email the e-MOR, email it to the address below
    - ↳ Once you have emailed your e-MOR, you should receive an e-mail reply confirming that it was received.
    - ↳ Print the reply and file it with the signed hard copy of the e-MOR for the month.
    - ↳ If you don't receive a response, try again or call the Field Office.
  - To mail the e-MOR to the Field Office, copy of the final report on a disk or CD, place it in the appropriate mailer and address it to the appropriate field office below.

Address	email	Contact person
Field Office 1, Manchester 909 West Main Suite #4 Manchester, IA 52057	fo1.MOR@dnr.state.ia.us	Mike Wade, Mike.Wade@dnr.state.ia.us 563-927-2640
Field Office 2, Mason City 2300 15th Street SW Mason City, IA 50401	FO2.MOR@dnr.state.ia.us	Curt Krieger, Curt.Krieger@dnr.state.ia.us 641-424-4073
Field Office 3, Spencer 1900 North Grand Ave, Suite E17 Spencer, IA 51301	fo3.mor@dnr.state.ia.us	Shelia Tuel, Shelia.Tuel@dnr.state.ia.us 712-262-4177
Field Office 4, Atlantic 1401 Sunnyside Lane Atlantic, IA 50022	mor.fo4@dnr.state.ia.us	Kirk Mathis, kirk.mathis@dnr.state.ia.us 712- 243-1934
Field Office 5, Des Moines 401 SW 7th, Suite 1 Des Moines, IA 50309	FO5.Mor@dnr.state.ia.us	Charles Furry, Charles.Furry@dnr.state.ia.us 515-725-0272
Field Office 6, Washington 1023 West Madison Street Washington, Iowa 52353-1623	fo6.mor@dnr.state.ia.us	Russell Royce, Russell.Royce@dnr.state.ia.us 319-653-2135

Step #3; Comments:

Note: by submitting an electronic copy of the MORs you and your facility are agreeing to conduct business with the IDNR in the electronic format where practical and in doing so, such information transmitted will have the same legal authority as traditional formats such as a signed paper format.

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